



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/840,270	04/24/2001	Yoshiki Nishigaki	Q64186	3336

7590 09/25/2003  
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC  
2100 PENNSYLVANIA AVENUE, N.W.  
WASHINGTON, DC 20037-3213

6  
EXAMINER

VARGOT, MATHIEU D

ART UNIT	PAPER NUMBER
----------	--------------

1732

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/840,270

Applicant(s)

NISHI GAKI

Examiner

M. VARGOT

Group Art Unit

1732

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- ☐ Responsive to communication(s) filed on \_\_\_\_\_
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-16 is/are pending in the application.
- Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-16 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☒ All ☐ Some\* ☐ None of the:
  - ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4
- ☐ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other \_\_\_\_\_

Office Action Summary

Art Unit: 1732

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese document 11-309,761 in view of Obuchi et al (see col. 6, line 61 through col. 7, line 6; col. 16, line 36; col. 16, line 51 through col. 17, line 6).

The primary reference discloses the basic claimed process for making a light transmitting plate by injection molding a PMMA polymer into a mold using an injection cylinder which feeds the resin to the mold and employing an injection rate of 20-100 cm<sup>3</sup>/sec. Note the reflective facets shown on the bottom of the plate in Figure 5. Essentially, the primary reference lacks a teaching of the exact injection rate being 1-15 cm<sup>3</sup>/sec, the viscosity of the resin and particulars of the injection. It is submitted that the exact injection rate would have been obvious over the primary reference dependent on the size of the image plane, as noted in the abstract of Japanese -761. Ie, the primary reference teaches that if the injection speed is below 20 cm<sup>3</sup>/sec, a guide plate of 10 inches or larger is hard to make. However, should the size be smaller than 10 inches, it is reasonable to assume that an injection rate of less than 20 cm<sup>3</sup>/sec would be acceptable, and it is submitted that 1-15 cm<sup>3</sup>/sec therefore would have been an obvious modification to the injection rate disclosed in Japanese -761. Obuchi et al discloses making a light guide plate using a resin with the instant viscosity; see the passage bridging columns 6 and 7 for the viscosity; the passage

Art Unit: 1732

bridging columns 16 and 17 for the grooves on the reflecting/bottom face of the plate; and col. 18, lines 14-49 concerning the injection molding. It would have been obvious to one of ordinary skill in the art to employ the viscosity taught in Obuchi et al in the process of the primary reference dependent on the size of the plate and the pattern of the light reflecting plane molded on the guide. Is short, it is believed shown that injection molding of light guide plates is well known in the art and that parameters such as injection rate and viscosity are result effective variables whose values would have been readily determined through routine experimentation. The exact method by which the molten resin is injected is also well within the skill level of the art as the two set forth in claims 2 and 3 are the conventional ways to meter resin into a mold--ie, either rotate the screw and meter the shot in gradually or move a cylinder to inject a shot basically all at once. Either applied reference discloses the reflective layer formed on the backside or bottom of the light guide plate by an engraved pattern on the mold; Obuchi et al shows a diffusion sheet (5) on the top (ie, light emission side) of the light guide and one of ordinary skill in the art would know that such would have also been provided as an engraved pattern formed by the mold. It is submitted that the instant cavity plates which have the engraved patterns on them are conventional in the art and would have been obvious modifications to the process of the primary reference to enable the formation of different light plates. Heating and cooling passageways for heat transfer fluids are well known in the art and would have been obvious modifications to the mold used in the process of the primary reference to facilitate molding of the product.

Art Unit: 1732

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Higuchi et al is cited as of interest in showing the molding of a light guide plate.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Vargot whose telephone number is 703 308-2621.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0661.

M. Vargot

September 18, 2003

*M. Vargot*  
MATHIEU D. VARGOT  
PRIMARY EXAMINER  
GROUP 1300  
9/18/03